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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,798	09/17/2003	Kai Rossen	240427US0X	3767

22850 7590 08/26/2005

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SOLOLA, TAOFIQ A

ART UNIT	PAPER NUMBER
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1626

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

file

Office Action Summary

Application No.

10/663,798

Applicant(s)

ROSSEN ET AL.

Examiner

Taofiq A. Solola

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-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 28 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-5,7,8 and 10-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-5,7-8,10-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims 1-5, 7-8, 10-21 are pending in this application.

Claims 6 and 9 are cancelled.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7-8, 10-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guerry et al., WO 96/16046.

Applicant claims a process of making 5-formyl-2-furylboronic acid comprising adding a base to a mixture of boric acid ester and protected 2-furaldehyde, working-up the mixture in acidic medium and isolating the product, which is recrystallized. In preferred embodiments, the boric acid is alkyl boric acid, the protecting group is O,O-acetal, the base is alkyl metal, the reaction temperature is -100 to 30°C, the work-up temperature is -10-70°C, the ratio of base to protected furaldehyde is 1:1.6 and that of boric acid to protected furaldehyde is 1:1.8.

Determination of the scope and content of the prior art (MPEP §2141.01)

Guerry et al., teach a similar process wherein a solution of butyllithium (an alkyl metal base) is added to furfural diethyl acetate (a protected furaldehyde) in ether. A solution of trimethyl borate (an alkyl boric acid ester) is added to the reaction mixture, working-up the reaction mixture in (HCl) acid, isolating the product and recrystallizing the product in water. The reaction temperature is between -40°C to 25°C, the work-up is at 0°C, the ratio of base to protected furaldehyde is 1:1.6 and that of boric acid to protected furaldehyde is 1:1.8. See line 30, page 29 to page 30, line 6.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

The difference between the instant invention and that of Guerry et al., is that applicant add a base to a mixture of boric acid ester and protected furalaldehyde instead of adding boric acid ester to a mixture of base and protected furalaldehyde by Guerry et al. Also, applicant is claiming the reaction temperature of -100 to 30°C , the work-up temperature of -10 - 70°C , instead of -40°C to 25°C and 0°C respectively, by Guerry et al.

Finding of prima facie obviousness—rational and motivation (MPEP §2142.2413)

However, adding a base to a mixture of boric acid ester and protected furalaldehyde instead of adding boric acid ester to a mixture of base and protected furalaldehyde is a modification within routine capability of one skilled in the art though it results in higher yield of the product. *In re Aller*, 105 USPQ 233 (CCPA, 1955). See *In re Mostovych*, 144 USPQ 38 (CCPA, 1964). Also, temperature ranges of -100 to 30°C and -10 - 70°C embrace -40°C to 25°C and 0°C respectively. Therefore, the instant invention is prima facie obvious from the teaching of Guerry et al. One of ordinary skill in the art would have known to modify the process of Guerry et al., at the time this invention was made. The motivation is from the teaching of Guerry et al., and because the modification is within routine effort of an artisan.

Applicant's arguments filed 6/28/05 have been fully considered but they are not persuasive. Applicant argues that the prior art of Guerry et al., fails to provide the step of reacting the formyl group of 2-furaldehyde with a protective group. This is not persuasive because it is not an inventive step in the instant claim: Applicant fails to disclose how the protective formyl-2-furaldehyde is made. Also, the specification, in page 1, lines 17-18, discloses that protected formyl-2-furaldehyde was made by Florentin et al., Bull. Soc. Chim. Fr. (1976), 11-12, 1999. Applicant also argues that by changing the order of adding the starting

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material the yield of the product is increased, that such change is not obvious and that "one of ordinary skill in the art would not have expected the reaction [scheme] to be successful." This is not persuasive because changing the order of adding starting reagent is a very common practice in the art and therefore under US patent practice is deemed an obvious modification.

See In re Mostovych, supra.

Objection

Claim 21 is objected to under 37 CFR 1.75 as being a substantial duplicate of claims 1 and 7. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper to object to the other as being a substantial duplicate claim. See MPEP § 706.03(k).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

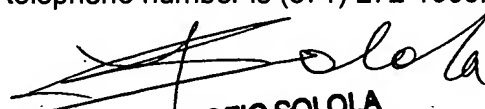
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Telephone Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Taofiq A. Solola whose telephone number is (571) 273-0709.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Joseph McKane, can be reached on (571) 272-0699. The fax phone number for this Group is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-1600.


TAOFIQ SOLOLA
PRIMARY EXAMINER

Group 1626

August 22, 2005